

any one without giving the Society the opportunity of purchasing. Signed, Eli K. Price, Chairman. On motion, the report was accepted and the committee continued, with orders to report again when needful.

The bill of Sherman & Son, for printing No. 70 of the Proceedings, &c., amounting to \$187 75, was referred to the Treasurer.

And the Society was adjourned.

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*Stated Meeting, May 20, 1864.*

Present, fourteen members.

Dr. Wood, President, in the Chair.

A letter accepting membership was received from James T. Hodge, dated Newburg, May 6th, 1864.

A letter accepting the appointment to prepare an obituary notice of General Totten was received from Prof. Vethake, dated Mantua, Philadelphia, May 19th, 1864.

Donations for the Library were received from the Essex Institute, Columbia College, Buffalo Young Men's Association, Franklin Institute, and Smithsonian Institution.

Dr. Le Conte offered for deposit in the Library a collection of Oriental works, selected from the library of his father, late Major Le Conte, which were accepted, and ordered to be suitably marked and kept together to be rendered on demand.

## BOOKS DEPOSITED BY DR. LE CONTE. MAY 20, 1864.

- Mosis Chorenensis Historiæ Armeniacæ, libri tres. Ed. Whistoni, filii. Lond. 1736. 4°.
- Nineveh and Persepolis. W. S. W. Vaux. Lond. 1850. 8°.
- Mellificium Historicum, complectens Historiam trium Monarchiarum; Chaldaicæ; Persicæ; Græcæ. Ch. Pezelio. Marpurgi, 1610. 4°.
- Mohammedis filii Chavendschahi, vulgo Mirchondi, Historia Samanidarum Persice. Fr. Wilken. Gœttingæ, 1808. 4°.
- Travels in Chaldea, in 1827. Cap. R. Mignan. Lond. 1829. 8°.
- Berosi Sacerdotis Chaldaici. Ed. ult. Antverpiæ, 1552. 12°.
- Jac. Perizonii Origines Babylonicæ et Egyptiacæ. Tomis II. C. A. Dukerus. Traj. ad Rhenum, 1736. 12°.
- De Regio Persarum. B. Brissonii. Ex typ. Hier. Commelini, 1595. 12°.
- A Geographical Memoir of the Persian Empire. J. M. Kinneear. Lond. 1813. 4°.
- Elements of the Chaldee Language. W. Harris. New York, 1823. 8°. Pamp. 24 pp.
- Narrative of a Journey to the Site of Babylon in 1811. Journey to Persepolis. C. J. Rich. Lond. 1839. 8°.
- Dissertation on the Antiquities of Persepolis. W. Price. 4°. Pamp. 36 pp.
- Observations on some Medals and Gems bearing Inscriptions in the Pahlavi Character. Sir W. Ouseley. Lond. 1801. 4°. Pamph. pp. 44.
- Mémoire sur deux Inscriptions Cunéiformes Trouvées pres D'Hamadân. M. E. Burnouf. Paris, 1836. 4°. Pamph. pp. 193.
- A Dissertation on the Newly Discovered Babylonian Inscriptions. Jos. Hager. Lond. 1801. 4°.
- A Specimen of Persian Poetry; or, Odes of Hafiz. Translated by J. Richardson from Revizky's Specimen. Lond. 1802. 4°.
- Travels in Georgia, Persia, Armenia, Ancient Babylonia, &c. Sir R. K. Porter. 2 vols. 4°. Lond. 1821.
- Journeys through Persia, Armenia, and Asia Minor. J. Morier. Lond. 1812. 2 vols. 4°.
- The History of Persia. Sir J. Malcolm. Lond. 1815. 2 vols. 4°.
- Travels in Assyria, Media, and Persia. J. S. Buckingham. 2d Ed. 2 vols. Lond. 1830. 8°.

- De Persidis Linguâ et Genio Commentationes. O. Frank. Norimb. 1809. 8°.
- Tableau Général de l'Empire Othoman. M. De M. D'Ohsson. Paris, 1788. 7 vols. 8°.
- The Persian Moonshee. Fr. Gladwin. Calcutta, 1801. 4°.
- Journal of the British Embassy to Persia. W. Price. Lond. 1825. 2d Ed. Vol. I. Long quarto.
- Tarich h. e. Series Regum Persicæ, ab Ardschir-Bakekan. W. Schikardo. Tubing. 1628. 4°.
- Observations on the Ruins of Babylon, as described by C. J. Rich. Rev. T. Maurice. Lond. 1816. 8°.
- Dissertations on the Rhetoric, Prosody and Rhyme of the Persians. F. R. Gladwin. Calcutta, 1801. 4°.
- Tentamen Palæographiæ Assyrio-Persicæ. A. A. H. Lichtenstein. Helmst. 1803. 4°.
- Historia Priorum Regum Persarum. M. Mirchond. Pers. et Lat. cum Notis. Viennæ, 1782. 4°.
- Mémoires sur Diverses Antiquités de la Perse. A. J. Silvestre de Sacy. Paris, 1793. 4°.
- Veteris Mediæ et Persiæ Monumenta. C. F. C. Hoeck. Gotting. 1818. 4°.
- Arsacidarum Imperium sive Regum Parthorum Historia. J. Foy Vaillant. 2 vols. 4°. Paris, 1725.
- Veterum Persarum et Parthorum et Medorum Religionis Historia. T. Hyde. Ed. secund. Oxon. 1760. 4°.
- Travels in Various Countries of the East, more particularly Persia. Sir W. Ouseley. 3 vols. 4°. Lond. 1819.
- The Oriental Collections of W. Ouseley. 2 vols. 4°. Lond. 1797, 1798.
- Lexicon Persico-Latinum Etymologicum. J. A. Vullers. Vol. I. 1855, bound, and unbound fasciculi, V i, V ii, VI i, VI ii (the rest wanting). Bonn, 1856.
- De Fatis Linguarum Orientalium Arabicæ nimirum Persicæ et Turcicæ Commentatio. Viennæ, 1780. F.
- A Dictionary, Persian, Arabic and English, with a Dissertation, &c. J. Richardson. New Edit. By C. Wilkins. Lond. 1806. 2 vols. 4°.
- Sabæan Researches. J. Landseer. Lond. 1823. 4°.
- Sententiæ Ali Ebn Abi Talebi Arabicæ et Latine. C. Van Wænen. Oxon. 1806. 4°.

- An Arabic Vocabulary and Index for Richardson's Arabic Grammar. T. Noble. Edin. 1820. 4°.
- A Hebrew and English Lexicon. W. Gesenius. Trans. by E. Robinson. 4th Ed. Boston, 1850. 8°.
- An Historical and Critical Inquiry into the Interpretation of the Hebrew Scriptures. J. W. Whittaker. Cambr. 1819. 8°.
- Lexicon Hebraicum et Chaldaicum J. Buxtorffii. Ed. nov. Glasguae, 1824. 8°.
- Institutiones Linguae Hebraicae R. Bellarmini. Paris, 1622. 12°.
- Dissertationes Miscellaneae H. Relandi. Traj. ad Rhen. 1706. 12°.
- The Israelitish Authorship of the Sinaitic Inscriptions. C. Forster. Lond. 1856. 8°.
- A Hebrew Primer. Bishop of St. David's. Pamph. 16 pp. 16°.
- Dissertationes Selectae, varia S. Litterarum et Antiquitatis Orientalis Capita D. Millii. Lugd. Bat. 1743. 4°.
- Biblia Hebraica B. A. Montani. (Hebrew text, with interlinear Latin translation and side notes.) 1581. F.
- Genesis in Hebrew, with New Translation. De Sola, Lindenthal, and Raphall. Lond. 5604—1844. 8°.
- Analysis and Critical Interpretation of the Hebrew Text of Genesis, preceded by a Hebrew Grammar. W. Paul. Edin. and Lond. 1852. 8°.
- Introduction to Genesis, with a Commentary on the opening portion. From the German of P. Von Bohlen. J. Heywood. 2 vols. Lond. 1855. 8°.
- Questiones Mosaicae; or, the Book of Genesis compared with the Remains of Ancient Religions. O. de B. Priaulx. London, 1842. 8°.
- Genesis Elucidated. J. J. W. Jervis. Lond. 1852. 8°.
- Genesis and Exodus. Being the first two volumes of A Historical and Critical Commentary on the Old Testament. By M. M. Kalisch. Lond. 1858 and 1855.
- Jewish School and Family Bible, in 3 vols. 8°. A. Benisch. Lond. 1851.
- Ascensio Isaiae Vatis. R. Lawrence. Oxon. 1819. 8°.
- Primi Ezrae Libri, Versio Ethiopica. R. Laurence. Oxon. 1820. 8°.
- The Times of Daniel. George, Duke of Manchester. Lond. 1845. 8°.
- Woodruff on Daniel's 70 Weeks. 4°.
- An Explanation of the 70 Weeks. J. Caverhill. Lond. 1777. 8°.
- A Chronological Essay on the Ninth Chapter of Daniel. P. Lancaster. Lond. 1722. 4°.

- Chronology of the Times of Daniel, Ezra, and Nehemiah. J. W. Bosanquet. Lond. 1848. 8°.
- In Librum Danielis R. Rolloei Scoti. Ed. alt. Genervæ, 1610. 16°.
- Josippon, sive J. Ben-Gorionis Historiæ Judaicæ Libri Sex. Ex. Heb. Lat. J. Gagnier. Oxon. 1706. 4°.
- Historia Imp. Vet. Joctanidarum in Arabia Felice ex Abulfeda. Persian Text. 4°.
- Specimen Historiæ Arabum, sive Gregorii Abul Farajii Malatiensis de Origine et Moribus Arabum E. Pocockii. Oxon. 1650. 4°.
- The Historical Geography of Arabia (with a Glossary of Hamyaritic Inscriptions). C. Forster. Lond. 1844. 2 vols. 8°.
- Miscellanea Phœnicia. H. A. Hamaker. Lug. Bat. 1828. 4°.
- Déscription de l'Arabie. C. Niebuhr. Unbound. Amsterdam, 1774. 4°.
- Voyage en Arabie. C. Niebuhr. Unbound. 2 vols. Amsterdam, 1776, 1780. 4°.
- Recueil de Questions Proposées à une Société de Savants que font le Voyage de l'Arabie. M. Michaélis trad. de l'Allemand. Amst. 1774. 4°.
- The Travels of Ibn Batuta. Translated from the Arabie. With Notes. S. Lee. Lond. 1829. 4°.
- The Oriental Geography of Ebn Haukal. (X. Cent.) Trans. Sir W. Ouseley. Lond. 1800. 4°.
- Récherches et Dissertations sur Herodote. Bouhier. Dijon, 1746. 4°.
- Récherches Curieuses sur l'Histoire Ancienne de l'Asie. J. M. Chahan de Cirbied and F. Martin. Paris, 1806. 8°.
- A Dissertation on the Geography of Herodotus. With Map. Researches into the History of the Scythians, &c. From the German of B. G. Niebuhr. Oxford, 1830. 8°.
- Maured Allatafet Jemaledдини filii Togri-bardii, seu Rerum Ægyptiacarum Annales, 971-1453. J. D. Carlyle. Cantab. 1792. 4°.
- Philosophical Dissertations on the Egyptians and Chinese. From the French of De Pauw. Cap. J. Thomson. 2 vols. Lond. 1795. 8°.
- Geographia Nubiensis. Arab. et Lat. Sionita et Hesronita. Par. 1629. 4°.
- Ægyptiaca. H. Witsii. De Ægyptiacorum Sacrorum cum Hebraicis Collatione. Amstel., 1683. 4°.
- Ægyptiarum Originum Investigatio. J. Perizonii. II. Van Alphen Traj. ad Rhen. 1736. 12°.

De Totius Africæ Descriptione. Lib. ix. 1. Leonis Africani in lat. conv. I. Floriano. Antverp., 1556. 12°.

Pantheon Ægyptiorum. P. E. Jablonski. Franc. ad Viadrum, 1750. 8°.

Africa Edrisii. Cur. J. M. Hartmann. Ed. alt. Gott. 1796. 8°.

L'Égypte sous les Pharaons. M. Champollion le Jeune. Paris, 1814. 8°.

Historical Researches into the Politics, &c., of the Carthaginians, Ethiopians and Egyptians. A. H. L. Heeren. Translated from the German. Oxford, 1832. 2 vols. 8°.

Historical Researches into the Politics, &c., of the Principal Nations of Antiquity. A. H. L. Heeren. Translated from the German. Oxford, 1833. 3 vols. 8°.

Précis du Système Hiéroglyphique des Anciens Egyptiens. M. Champollion le Jeune. 2d Edit. Paris, 1827, 1828. Unbound. 2 vols. 8°.

Rig-Veda-Sanhita. H. H. Wilson. Lond. 1850. 8°.

Observations on the Plagues of Egypt. J. Bryant. New Edition. Lond. 1810. 8°.

Origines; or Remarks on the Origin of Several Empires, &c. Sir W. Drummond. 4 vols. Lond. 1824. 8°.

Hermes Scythicus; or, the Radical Affinities of the Greek and Latin Languages to the Gothic. J. Jamieson. Edin. 1814. 8°.

A Dissertation on the Languages, &c., of Eastern Nations. 2d Ed. New Analysis of Ancient Mythology, in answer to Bryant's Apology. J. Richardson. Oxford, 1778. 8°.

Ancient Alphabets and Hieroglyphic Characters Explained in Arabic. By A. Bin Abubekr Bin Wahshih. Englished by J. Hammer. Lond. 1806. Square 8°.

The One Primeval Language. C. Forster. 3 vols. Lond. 2d. Ed. 1852.

A Harmony of Primeval Alphabets. C. Forster. In box cover. 8°.

Ogygia; or, A Chronological Account of Irish Events. Latin. R. O'Flaherty, Esq. J. Hely. 2 vols. Dublin, 1793. 8°.

Phœnician Ireland. J. L. Villaneuva. Englished by H. O'Brien. Lond. Dub. 1833. 8°.

The Rivers of Paradise and Children of Shem. Expedition of Sesostris into India. Maj. W. Stirling. Lond. 1855. 8°.

Reflexions Critiques sur les Histoires des Anciens Peuples, Chaldéens, Hébreux, Phéniciens, Egyptiens, Grecs, &c. M. Fourmont. 2 vols. Paris, 1735. 4°.

- Prospectus of a Dictionary of the Language of the Aire Coti or Ancient Irish; with the Language of the Cuti or Ancient Persians; with the Hindoostance, Arabic and Chaldean. Lieut.-Gen. C. Vallancey. Preface.—Account of the Ogham Tree-Alphabet of the Irish, lately found in an Ancient Arabic MS. in Egypt. Dub. 1802. 4°.
- Prosodia Rationalis; or, An Essay towards Establishing the Melody and Measure of Speech by Peculiar Symbols. 2d Edit. Josh. Steele. Lond. 1779. 4°.
- Researches into the Origin and Affinity of the Principal Languages of Asia and Europe. Lieut-Col. Vans Kennedy. Lond. 1828. 4°.
- Remains of Japhet, being Historical Inquiries into the Affinity and Origin of the European Languages. Jas. Parsons. Lond. 1767. 4°.
- Explication de Divers Monumens Singuliers qui ont Rapport à la Religion des plus Anciens Peuples. . . . l'Astrologie Judicatoire; enrichi de figures. R. P. Dom . . . de St. Maur. Paris, 1739. 4°.
- Populorum et Regum Numi Veteres Inediti. Fr. Neumanno. Vindob. 1779. 4°.
- Les Origines Indo-Européennes, ou les Aryas Primitifs. Essai de Paléontologie Linguistique. Adol. Pietet. Paris, 1859. Grand 8°.
- De Initiis et Originibus Religionum in Oriente Dispersarum quæ Differunt a Religione Christiana. D. G. H. Bernstein. Berol, 1817. Small 4°.
- Seder Olam. Chronicon Hebræorum Majus et Minus. J. Meyer. Amstell. 1699. 4°.
- Animadversions upon Sir Isaac Newton's Book, entitled The Chronology of Ancient Kingdoms Amended. A. Bedford. Lond. 1728. 8°.
- Shuckford's Connections. The Sacred and Profane History of the World Connected. Revised by J. Creighton. First Amer. Ed. Phila. 1824. 4 vols. in 2. 8°.
- Prideaux's Connections. The Old and New Testament Connected. H. Prideaux. 18th Ed. 4 vols. Lond. 1821. 8°.
- Russell's Connections; with a Folio Atlas. A Connection of Sacred and Profane History. M. Russell. 3 vols. Lond. 1827. 8°.
- Chronology. Fr. Parker. Lond. 1858. 8°.
- New Analysis of Chronology, &c. W. Hales. 2d Ed. 4 vols. Lond. 1830. 8°.
- Sacred Chronology. G. Faussett. Ed. R. Faussett. Ox. 1855. 8°.

- Institutionum Chronologicarum Libri 3. G. Beveregium. Lond. 1669. 4°.
- Chronologia Sacra-Profana Dicta G. Davidis. R. D. Ganz. Ex. Heb. en Lat. G. H. Vorstium. Lug. Bat. 1644. 4°.
- Questiones Chronologicæ de annis Dom. Julian. et Nabonass. R. P. H. Philippi. Col. Agrip. 1630. 4°.
- Système Chronologique sur les trois Textes de la Bible, &c. M. Michel, de Toul. Toul, 1733. 4°.
- Historia Orientalis. J. H. Hottingero. Tigurino, 1651. 4°.
- Asia, sive Historia Universalis Asiaticum, &c. . . . Sacri Profanique Ritus. J. Baptista de Gramaye Arnheimiensi. Antv. 1604. 4°.
- Historia Compendiosa Dynastiarum, auc. G. Abul-Pharajio. Arab. ed. et Lat. ver ab E. Pocockio. Oxon. 1663. 4°.
- L'Antiquité des Temps Rétablie et Défendue, contre les Juifs et les Nouveaux Chronologistes. Par le Père Pezron. Paris, 1687. 4°.
- Eusebii Pamphili Chronicorum Canonum libri duo. I. Zohrabo. Mediolani, 1818. F.
- Chronicus Canon Ægyptiacus, Ebraicus, Græcus, et Disquisitiones D. T. Marshami. Lond. 1672. F.
- Chronicon Orientale nunc Primum Donatum ab. Abr. Ecchelensi Syro Maronita e Libano, &c. Paris, 1651. Grand F.
- Chronological Antiquities, or the Antiquities and Chronologies of the most Ancient Kingdoms, &c. J. Jackson. Lond. 1752. 3 vols. Grand 4°.
- Récherches sur l'Origine, l'Esprit, et les Progrès des Arts de la Grèce; sur leurs Connections avec les Arts et la Religion de plus Anciens Peuples Connus, &c. Lond. 1785. 3 vols. 4°.
- ΦΩΤΙΟΥ ΜΥΡΡΙΟΒΙΒΑΟΝ Η ΒΙΒΛΙΟΘΗΚΗ. Lat. vero peddidit et scholis auxit A. Schottus Antverpianus. Genevæ (O. P. Stephani), 1611. F.
- ΠΑΣΧΑΛΙΟΝ seu Chronicon Paschale a mundo condito ad Heraclii Imp. An. XX, cum nova Lat. ver. not. Chron. et Hist. Cur. Caroli du Fresne, D. du Cange. Paris, 1688. F.
- Commentaire Géographique sur l'Exode et les Nombres. Leon de Laborde. Unbound. Paris et Leipsig, 1841. F.
- Codex apocryphus novi testamenti, collectus, castigatus, testimonisque, censuris et animadversionibus illustratus à J. A. Fabricio. Hamb. 1703. 16°.
- Acta, Epistolæ, Apocalypses, alia Scripta Apostolis falso inscripta, sive Codicis Apocryphi Novi Testamenti. Tom. II. 12°.



J. Perisionii, Ant. F. Animadversiones Historicae, &c. Amstell. 1685. 16°.

Græca Linguae Historia. F. Burtono. Lond. 1657. 16°.

Transactions of the Literary Society of Bombay. Vol. I. Lond. 1819, Vol. II 1820, Vol. III 1823.

Journal Asiatique ou Recueil de Mémoires, &c., relatifs à l'Histoire, &c., des Peuples Orientaux. Rédigé par MM. Chézy, &c. &c., et Publié par la Société Asiatique. Paris. Vol. I 1822, II 1823, III 1823, IV 1824, V 1824, VI 1825, VII 1825, VIII 1826, IX 1826, X XI 1827. (Rest wanting.)

The Journal of the R. Asiatic Society of Great Britain and Ireland. Lond. 8°. Vol. X i 1846, ii iii 1847, XI i ii 1849, XII 1850, XIII i 1851, ii 1852, XIV duplicate of i 1851, XV i 1853, ii 1853, XVI i 1854, ii 1856. (Rest wanting.)

Twenty-ninth Annual Report of R. Asiatic Society, 1852. Pamph. Relating to Rawlinson's and Layard's Discoveries.

Transactions of the Chronological Institute of London. Part I 1852, Part II 1857, Part III 1858.

Dr. Wilcocks presented for publication in the Transactions, a memoir entitled: "Thoughts on the Influence of Ether in the Solar System; its relations to the Zodiacal Light, Comets, the Seasons, and Periodical Shooting Stars;" which, on motion, was referred to a Committee consisting of Prof. Kendall, Prof. McClune, and Mr. Marsh.

Dr. Wilcocks read the following synopsis of the communication:

The paper describes briefly the ideas entertained of Ether by the Hindoos, as well as by two of the schools of Greece; but asserts that it is not by the aid of any such fluid that I shall undertake to explain the cause of the phenomena mentioned in the title. My only purpose in dwelling upon the ancient theories is, to show how they have biased the minds of modern astronomers.

The discovery of Professor Encke, I have offered as the first rational evidence of the existence of a resisting medium in space, and have made a suggestion regarding the density of the Ether in different parts of the solar system.

The fact of our intercourse with matter being altogether with gross substances, I have urged as the great difficulty of appreciating the nature of ether; and have proposed that while discussing the

subject, we should endeavor to lay aside notions of matter already acquired, and try to view it as we believe it to exist in the celestial spaces.

The physical constitution of the sun, as received by the best authorities, I have described as far as I believe it to influence the motion of the ether. The rotation of that orb upon its axis, with the position of the latter with reference to the ecliptic, I have recounted; also the observations of Secchi upon the relative heat of different parts of the sun's surface, and the influence of this difference of heat in determining the character of the ethereal currents.

After duly considering the effect of these agencies upon each other, the conclusions are reached that the ether in the solar system is in constant motion, that it performs a circulation from the sun's poles to the equator, and thence into the region of the planets, and finally returning to the sun's poles, descends thereon in the form of vortices; that the shape of the mass, as it advances into space, is that of a huge plate, or more precisely a hollow cone, whose apex forms a highly obtuse angle at the sun's centre.

The existence of reflecting matter in the ether is shown from the corona of light seen round the moon during a total eclipse of the sun.

It is suggested that a perspective view of the ascending current of ether, as it advances through the region of the planets, produces the appearance known as the zodiacal light.

The weak points of former explanations of this phenomenon are exposed, and the claim urged that the theory of ethereal currents, derived altogether from independent data, affords the best explanation.

All the positive information we have upon the subject of ether is derived from its effect upon comets, but long before Encke's day, Sir Isaac Newton had undertaken to explain some of the most prominent features of these bodies, upon the hypothesis of their moving through a material fluid.

The views of Newton, with respect to the position of the tails of comets, I have noticed, with the reflection, that neither in his own day nor ours have his ideas upon the subject received that support from astronomers to which their merit entitles them. I have suggested several reasons to account for the fact.

The ingenious and plausible hypothesis of M. Valz respecting the density of the ether in the solar system, is described, with his expla-

nation of the reduction of volume in comets on approaching the sun, and their subsequent increase on receding from that luminary.

The non-concurrence of M. Arago and Sir John Herschel in the theory of M. Valz is given as evidence of the influence of the ancient theories of ether at the present time upon the minds of astronomers.

The existence of the ascending current of ether near the ecliptic is offered in explanation of certain peculiarities of Halley's comet, which have been observed in five of the eight visits which that body has made to its perihelion since the year 1305.

The vortical currents which descend upon the poles of the sun, are urged as the causes of the exceptional position of the tails of such comets as have passed through them.

The catalogues of comets in the works of M. Arago and Mr. Hind show that the orbits of all those bodies which have had tails directed towards the sun, have had an inclination of more than seventy degrees, and a perihelion distance less than one-fourth the radius of the earth's orbit.

The ascending current of ether which, owing to the reflecting matter which it contains, becomes visible to us as the zodiacal light, cannot be of as low a temperature as the surrounding medium.

In order to show the influence of ether upon the seasons, I have traced, by the aid of *à priori* reasoning, the path of the ascending current through the solar system.

I have determined by calculation the points where the earth passes through the current, and endeavored to demonstrate that the first passage occurs in the month of August, and produces the canicular days; the second passage takes place in November, and is the cause of the season known as the Indian summer.

Several minor influences of the ethereal currents upon the seasons are suggested, and the effort made to connect, through the relation of cause and effect, these influences with known phenomena.

A belief in the ethereal origin of the dog-days and the Indian summer, naturally leads to the inquiry, May not the numerous sporadic shooting stars seen about the 10th of August, and the showers of them sometimes seen on the 12th of November, proceed from the same cause? Under the impression that this might be the case, I was induced to search for the existence of some numerical coincidence between the grand November exhibitions of shooting stars, and the sidereal year.

I found that the number of days between the years of the great

exhibitions, 1799 and 1833, was 12418.704, and that the number of days in 487 rotations of the sun are 12418.5, the difference being only four hours and forty-eight minutes.

It is, therefore, proved that any part of the sun's surface turned towards the earth, at any given point in its orbit, in the year 1799, was also turned towards the earth at the same point of its orbit, in 1833, and will be again in 1867 and 1901.

Messrs. Bunsen and Kirehoff have ascertained that the sun's atmosphere contains metals in the vaporous state.

If we permit ourselves to believe that a portion of this metallic vapor escapes from the sun's atmosphere without undergoing the chemical change which produces the light and heat, and if this metallic vapor be transported to the earth's orbit by the ethereal current, it will be liable to an encounter with our planet in those parts of its yearly path, where it passes through the ascending current of ether, viz., in August and November.

If, in addition to this, we believe that a certain part of the sun's surface either constantly or frequently emits this metallic stream, the periodical recurrence of the meteoric shower may be looked for at intervals of thirty-four years.

I have illustrated my theory with several diagrams, which are based upon the observations of astronomers of established reputation. One of these diagrams shows the relation between the sun's equator, the ecliptic, and the ascending current of ether. The distance of the earth from the last at different seasons of the year, is made apparent. On comparing it with the table of MM. Coulvier, Gravier, and Saigey, a curious agreement is shown to exist between the distance of the earth at different seasons from the ascending current of ether, and the occurrence of shooting stars.

I have resigned the subject with the conviction that as it is one of immense interest, and has received no justice at my hands, it will speedily excite the attention of those who have made special studies of the various phenomena which I have endeavored to combine under one cause.

The Committee on Mr. Oliver's note to Mr. Chase's memoir, to be published in the Transactions, reported in favor of its being published with the memoir; which, on acceptance of the report, was so ordered.

Mr. Foulke presented for the Library a copy of the libretto of Mr. Fry's new opera of Notre Dame of Paris, and spoke

of the adaptability of sounds, especially the vowel sounds of the English language, to musical compositions of this order.

Mr. Foulke exhibited, also, a curious specimen of a triple orange.

Prof. Lesley made a communication on the Abbeville quarries, which led to a discussion on the subject of the sufficiency of the evidence, as yet obtained, for the alleged super-antiquity of the human remains found in the diluvium; Dr. Goodwin especially objecting the high authority of M. Elie de Beaumont, and the doubts resting upon the precise relationship of the Loess.

The interesting discussions of the last three years over the views of our fellow-member, M. Boucher de Perthes, and especially the fresh discussions to which the alleged discovery of a human jaw near Abbeville had given an impetus, induced me to visit his famous collection and the quarries from which his earlier specimens had been obtained. In London, I had learned that the English geologists had accepted the genuineness and diluvial antiquity of the implements, but rejected that of the jaw. In Paris, I found, on the contrary, that the geologists, with the exception perhaps of M. Elie de Beaumont, and also the ethnologists, had agreed to place the jaw in the same category with the implements. Dr. Broca, the Secretary of the Anthropological Society, had the goodness to show me the manuscript report of the joint commission of English and French savants, since published by the Academy, authoritatively declaring its genuineness. On my return to England, Mr. Evans assured me that the jaw was a forgery, and that he had proven the forgery of many of the implements also.

The change of view manifested by Sir Charles Lyell in his recent work on the Antiquity of Man, in relation to the genuineness and antiquity of the Natchez *pelvis*, had been commented on with much interest and some surprise, as opposed to the current of English sentiment respecting the whole subject. Sir Charles, when in America, had convinced himself that Dr. Dickeson's *pelvis* was a mistake, it being merely the *os innominatum* of some Indian girl, fallen from an ancient graveyard at the surface above, among the debris of the cliff formation which held the extinct remains of the post-pleiocene period. Those of us who were present at the meeting of the Academy of Natural Sciences in Philadelphia, at which Dr. Dickeson presented the bone to the Cabinet, will remember the indif-

ference with which it was presented, and the silence with which it was received. The fact is, no one was prepared, twenty years ago, for such a fact. It was as blinding and unpleasant as a flash of sunlight in a mirror. The intellectual eyes of science must become accustomed to such astounding discoveries. It required thirty years to produce a state of science in Europe susceptible to the impression which M. Boucher de Perthes' cabinet had a destiny to make. And nearly as long a time was required to obtain for the Natchez pelvis the first reception into the text-book of a distinguished geologist. At the instigation of Dr. Falconer, I am happy to say that Dr. Leidy has promised to renew the discussion of this bone by instituting a chemical and microscopic examination of its condition. We may then know more about its antiquity. But since the discovery by M. Desnoyers of pleiocene fossil bones, scratched and cloven by the hands of men, there is no longer any good reason for throwing doubt upon its alleged geological position.

The distinguished chief of geology in France, M. Elie de Beaumont, is understood to occupy solitary ground in the matter of the Abbeville implements. Their antiquity depends upon that of the formation in which they lie, and upon the fact that they lie in it mixed with the bones of extinct species of animals. If the formation be strictly *in situ*, there is no escape from the conclusion that the implements and the bones are of equal age, and therefore that Man lived with these extinct animals. If, on the contrary, it can be shown that the formation is an after-make, a slide from above, a débâcle, a local deposit hastily brought together from different neighborhoods, the argument for the antiquity of the implements is lost. Elie de Beaumont is said to assume Cuvier's view of the formation, and calls it a slide from the upland into the valley of the Somme, and then denies the antiquity of the implements.

It was especially with a view to form an opinion upon this point that I visited Abbeville; and after enjoying the same courteous reception from M. Boucher de Perthes that he accords to all strangers, I examined the quarries in the neighborhood; first, that of Moulin Quignon, where the jaw was said to have been found; and then those of Menchecourt. The former had so fallen in that I could not obtain access to the depth at which the jaw is placed. But I saw no reason to imagine any change in the original condition of the deposit. There is no escarpment or steep valley wall to give the remotest chance of a slip. The whole valley is shallow, and the slopes are so gentle that it is hard to say where the valley ends and



the table-land begins. Whatever the age of the gravel and loam, they undoubtedly rest upon the old topography of the chalk just as they were at first deposited upon it.

Returning through the old city and going out over its moats in the opposite direction, I was driven through the long one-streeted-village of Menchecourt. Behind the houses, at the distance of a hundred yards, are the quarries, with their common floor on a level with the site of the village and their vertical faces, or stopes, rising behind to the height of from twenty to thirty feet, no more. As they are slowly cut back into the upland, the stoping becomes higher; but so gentle is the slope of the land, in that direction, that years will be consumed in obtaining a face of twice that height. There is not the least appearance of a slide anywhere. The soil above, the layers of broken flint and loam, are evidently in their normal condition. The original stratification is nowhere concealed or confused by subsequent movements from above. The "falsebedding" or oblique deposition is curiously visible, and affords abundant evidence of the diversity of currents which introduced the materials. In a few places the subordinate members of the section express themselves by waved lines, suggesting lateral pressure, but not in the form so well known to geologists, where the mass is broken and crumpled by a side thrust or by a slip of the upper upon the under strata. The characteristic feature of all quiet, loamy, and sandy deposits, viz., the isolation of lenticular belts of one stratum inside of the limits of the stratum next above or below, is beautifully exhibited. The distribution of the chalk fragments is also open to easy study. But the most striking appearance is that presented by perfectly horizontal parting planes, marked sometimes by thin beds of equally distributed broken flints. Such are, for example, the two lines between *b* and *c*, and *c* and *d*, in Fig. 1, Plate VII.

In this section, *a* represents a layer of broken flints, no doubt a river shore. It passes down into a fine loamy sand. Beneath the second thin horizontal sheet of broken flint, the mass of loam *d* is stratified in lenses, alternately greenish and yellowish. No chalk or gravel is seen at the floor of the quarry here.

Fig. 2, is a section about 100 paces west of Fig. 1, *a*,  $1\frac{1}{2}$  metres thick, is a stiff clay, with a few broken flints at the top and at the bottom; *d*, a reddish, yellowish clay, tolerably well filled with broken flints; *b*, 1 metre, is quite filled with broken pieces of chalk and broken flints; *c*, is a perfectly homogeneous mass of drab or dove-colored loam, 2 metres of which are visible, and no floor.

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Fig 1

Menchecourt Quarry East End

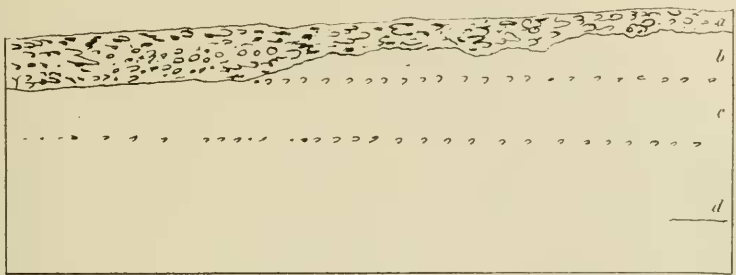


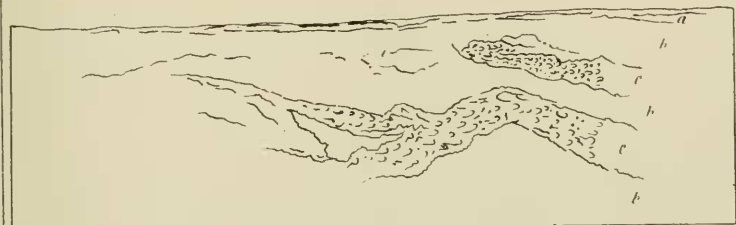
Fig 2

Menchecourt Quarry West End



Fig 3.

Menchecourt quarry West End







37<sup>6</sup> ✓

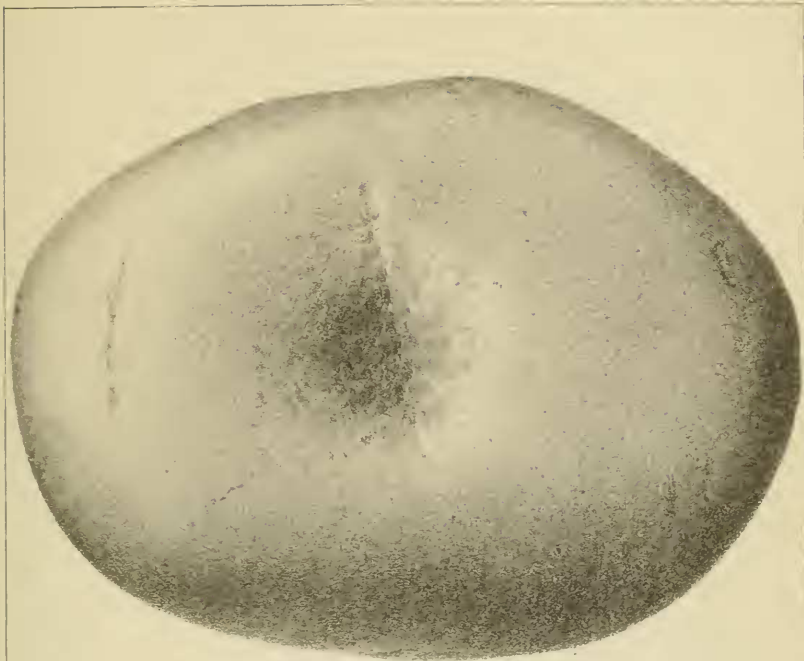
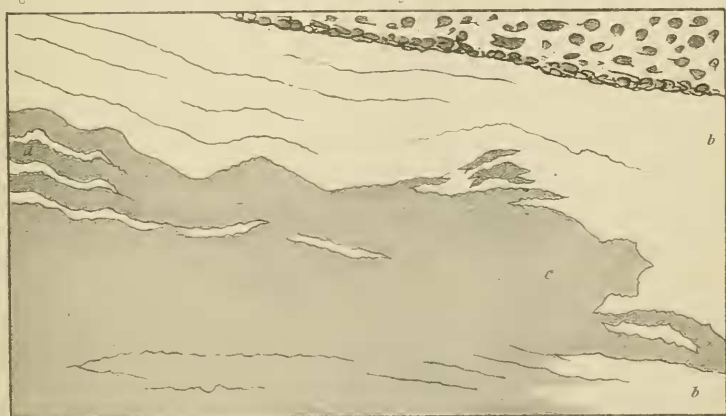


Fig 4

*Menchevourt Quarry, West End*



*Chalk floor appears within 2 yards of this exposure*

